

-14-

We Claim:

1. An article comprising a wear resistant coating applied to a cemented carbide body wherein:

the cemented carbide body comprises WC with an average grain size of
5 0.5-4 μm , 3.5 - 9 wt-% Co and <2 wt% carbides of Ta, Ti and Nb, said body
further comprising a core containing finely distributed eta phase islands with a size
of 1-15 μm , the core containing 10 - 35 vol-% WC and Co binder phase, said
body further comprising an intermediate zone 50-250 μm thick and is essentially
free of eta phase and with nominal Co-content, said body further comprising a 0-
10 25 μm thick surface zone free of eta phase with a Co content lower than the
nominal Co-content of the body;

wherein the binder phase in the intermediate zone comprises a bimodal
structure of smaller original binder phase islands and larger binder phase islands.

2. The article of claim 1, wherein the core further comprises gamma
15 phase.

3. The article of claim 1, wherein the coating comprises a layer of
 TiC_xN_y where $x+y=1$, $x>0.3$ and $y>0.3$, with a thickness of 5-10 μm with
columnar grains having a diameter of a size <2 μm .

4. The article of claim 1, wherein the coating comprises at least one
20 layer chosen from a smooth $\alpha\text{-Al}_2\text{O}_3$ and $\kappa\text{-Al}_2\text{O}_3$ the layer having a grain size of
0.5-2 μm with a thickness of 3-6 μm .

-15-

5. The article of claim 1, wherein the coating comprises

- a first, innermost, layer of $\text{TiC}_x\text{N}_y\text{O}_z$ with $x+y+z=1$ and $y>x$ and $z < 0.1$ with a thickness of $0.1-2 \mu\text{m}$, and with equiaxed grains having a size $< 0.5 \mu\text{m}$;

5 - a second layer of TiC_xN_y where $x+y=1$, $x>0.3$ and $y>0.3$, with a thickness of $5-10 \mu\text{m}$ with columnar grains having a diameter of a size $< 2 \mu\text{m}$;

- a third layer of $\text{TiC}_x\text{N}_y\text{O}_z$ where $x+y+z=1$, $z<0.5$ and $x>y$ with a thickness of $0.1-2 \mu\text{m}$ and with equiaxed or needle-like grains having a size $< 0.5 \mu\text{m}$;

10 - a fourth layer of smooth ~~$\alpha\text{-Al}_2\text{O}_3$~~ having a grain size of $0.5-2 \mu\text{m}$ with a thickness of $3-6 \mu\text{m}$; and finally

- an outermost layer of $\text{TiC}_x\text{N}_y\text{O}_z$ where $x+y+z=1$, $z<0.05$ with a thickness of $0.5-3 \mu\text{m}$ and a grain size $< 1 \mu\text{m}$.

6. The article of claim 1, wherein the article comprises a cutting tool.

15 insert having at least one cutting edge and a clearance side.

7. The insert of claim 6, wherein the outermost layer is removed along the cutting edge so that the Al_2O_3 layer is exposed along the cutting edge, and the outer layer of $\text{TiC}_x\text{N}_y\text{O}_z$ is exposed on the clearance side.

Sub 20 8. A method of making a coated cemented carbide body, the body comprising a cemented carbide of WC with an average grain size of $0.5-4 \mu\text{m}$, $3.5-9 \text{ wt-\% Co}$ and $< 2 \text{ wt-\%}$ carbides of Ta, Ti and Nb and with a substoichiometric carbon content, the method comprising: sintering the body such that an eta phase containing structure is obtained in which the eta phase is finely distributed with a size of $1-15 \mu\text{m}$ and a content of 10 vol-\% to 35 vol-\% , and
25 subjecting the cemented carbide body to a gentle recarburisation such that the eta

-16-

7 phase in a 50-350 μm wide intermediate zone is transformed to WC+Co without essentially changing its Co-content.

[Handwritten signature]

[illegible]